off the mark. Accordingly, any similar assertions, which are likely to be made in this proceeding, should not be countenanced.

B. A Separate Subsidiary Requirement Would Jeopardize The Foregoing Benefits, With No Attendant Alternative Benefits.

A separate subsidiary requirement would destroy the opportunity for replication of public benefits like those described in the foregoing section, with no offsetting expectation of an alternative mechanism to drive such benefits. Thus, the true cost of a separate subsidiary requirement is the opportunity cost of foregone benefits. Notwithstanding opponents' routine assertions to the contrary, the ubiquitous nature of the BOCs' sales channels and marketing operations provides a legitimate asset that

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[69](...continued)

> million in 1994. . . . E-mail subscribership has grown from 6 million in 1989 to over 13 million in 1993. E-mail revenues increased from $574 million in 1989 to $740 million in 1991 and an estimated $1.2 billion in 1994. BOCs have not attained anything remotely close to a dominant position in any of these enhanced market segments.

Hausman and Tardiff, at 8-9 (citations omitted). That these markets are thriving without a large BOC presence provides no grounds for the argument some are sure to make that the Commission does not need to grant structural relief. To the contrary, these data demonstrate that, precisely because these markets are thriving with existing safeguards, there is no need to reimpose costly structural safeguards for effective BOC participation.

should be used to make enhanced services as widely available as possible.[70]

As the Commission has repeatedly found, provision of enhanced services on an integrated basis with basic services can result in operational efficiencies, economies of scope, and cost savings by avoidance of separation and or duplication of assets and personnel that would be required by a separate subsidiary requirement. Throughout these proceedings, opponents of structural relief have not produced any evidence of comparable benefits fostered by a separate subsidiary requirement. That enhanced service markets are growing robustly and are already competitive, as many are sure to argue, proves nothing about "benefits" of separate subsidiary requirements. All those arguments do is undermine the assertion the same parties make that the BOCs will have the ability to enter these competitive markets and interfere with their competitive functioning.

That such assertions and predictions are unfounded is evident from the fact that none of that has occurred. Indeed, as Hausman and Tardiff point out, since the BOCs

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[70] That not all enhanced services are as readily integrated into existing sales channels as are voice messaging services is no reason to deny the opportunity. BOCs should have the flexibility to integrate their sales channels and other operations to the extent marketplace needs warrant it for different services, or for different applications (niche markets) of similar services. For this reason, the Commission should reject any suggestions of a regulatory framework under which safeguards would be tailored to "fit" a particular enhanced service or market.

have been authorized to provide integrated enhanced services, output and consumer welfare have grown substantially, negating any claim of anticompetitive effect.[71] Moreover, as the recently filed CEI plans and plan amendments indicate, the BOCs have continued to approach enhanced service markets conservatively. A key reason for this, of course, is that the Commission's nondiscrimination safeguards are effective and ensure that the BOCs must contend with the same competitive market pressures as other participants. Thus, BOC participation in enhanced service markets is already constrained by existing competition in those markets. A separate subsidiary requirement is therefore not required.

C. Moving Existing Services To A Separate Subsidiary Would Cause Significant Customer Confusion, Higher Service Costs, And Potential Loss Of Service Availability.

In the Notice, the Commission asked parties to identify transitional expenses that would be borne by customers of BOC enhanced services, and to indicate whether a return to structural separation requirements would result in disruptions of service or confusion among customers. As shown below, the reimposition of a separate subsidiary requirement on currently integrated operations would cause significant confusion for customers utilizing those services, would cause the BOCs to incur higher costs of

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[71] Hausman and Tardiff, at 8.

providing those services leading to higher prices for those services, and could lead to loss of service availability in some areas. Such a result is clearly antithetical to the public interest.

If BellSouth were required to offer voice mail service on a structurally separate basis, the cost impact would be significant. Although all aspects of the operation would incur increases in costs, they can be generally qualified in four categories: sales, advertising, customer service/repair, and facilities costs. Overall, BellSouth projects that its unit cost of providing a voice mailbox would increase by 176% over a six year planning period as a result of a separate subsidiary requirement.

Operating as a structurally separate entity would mean the loss of marketing opportunities from existing sales channels. The loss of these opportunities would need to be countered through another sales channel. At a minimum, this would mean the addition of personnel to perform this function, as well as utilization of different sales contacts, such as telemarketing and direct mail. Naturally, the efficiencies of existing integrated sales would be lost as the range of products offered on a single contact would be reduced. New sales channels are likely to be less effective as well. For example, most customers are reluctant to buy from telemarketers. BellSouth customers have a certain level of confidence and trust in BellSouth which could be lost to some extent through the use of telemarketing, particularly if the "BellSouth" representative does not have access to the customer's phone records.

BellSouth estimates that changes such as these resulting from structural separation would cause a 209% increase in its unit sales costs. Furthermore, the loss of sales opportunities, the increased complexity of sales negotiation, and customer confusion would all amount to a significant decrease in sales. This erosion of the customer base would have further impact on the price BellSouth would have to charge for the service, as well as on the financial viability of offering voice mail service in BellSouth's rural or smaller metro areas.

Operating as a separate subsidiary would also trigger an increase in advertising expense. Two factors contribute to this increase. First, operating as an integrated entity, costs for jointly advertising MemoryCall and the associated complementary network services are shared between the services in accordance with the Commission's rules. As separated offerings, separate advertising campaigns would need to be developed, the total cost of which would fall on the respective products. The second factor contributing to an increase would be the need for more advertising. In order to make up for the loss of sales opportunities, MemoryCall would be required to advertise more. Additional advertising would be required to increase customer awareness, alleviate some of the resistance to telemarketing, and reassure customers that, although MemoryCall is a "structurally separate company," it's service quality and customer service are just what they would expect from BellSouth.

BellSouth projects that advertising costs for MemoryCall operating as a separate entity would need to increase by 300%. Despite this increase, advertising would be less effective due to customer confusion. Once again this would have a significant impact on sales rates, per unit costs, and MemoryCall penetration into the smaller metro areas.

Once the sale is made, customer service and repair become the major areas impacted by structural separation. As a structurally separate company, MemoryCall would be required to obtain new and dedicated systems and personnel to provide these functions. Of course, new and additional floor space would be required to house the new personnel and equipment.[72]

Any reduction in the perceived quality of customer service would result in diminished sales and increased churn

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[72] Similarly BellSouth would be required to duplicate a number of administrative functions and support systems, such as those that provide service order entry, service provisioning, tracking and billing. Additional and separate floor space would also be required to house these new systems and the personnel to operate them.

rates. Many customers will not tolerate any increase in the complexity of the service. Structural separation, by definition, will increase that complexity and will certainly lead to a reduction in BellSouth customer base for voice mail services. Therefore, not only will the total cost to provide customer service increase, but also the number of customers will decrease. Both factors compound to produce a much higher per mailbox cost to provide customer service. BellSouth estimates the increase in customer service costs at 40% per mailbox.

Because MemoryCall service currently purchases transport facilities at tariffed rates, there would not be as large a direct impact on these costs should BellSouth be required to transition voice mail to a separate subsidiary. However, a decrease in the MemoryCall customer base, brought on by the above mentioned issues would reduce facility efficiency. Generally accepted engineering principles state that smaller trunk groups are less efficient than larger ones. Therefore, BellSouth would incur greater costs for facilities on a per mailbox basis as the customer base eroded. In some areas, BellSouth's MemoryCall service customer base is so small only one voice storage platform is required. Obtaining separate conditioned floor space with security, maintenance personnel and back-up power for one platform could become cost prohibitive. These problems would have the greatest impact on BellSouth's smaller metropolitan areas. BellSouth projects that converting to a structurally separate entity would increase the cost of goods sold by 105% on a per mailbox basis over the six-year planning period.

In short, BellSouth projects its overall cost of providing voice messaging service to increase 176% (weighted average of the foregoing components) over a six year planning period. Clearly, the costs of separation are significant.

These costs, of course, do not all fall only on BellSouth, but also on customers. Customers would likely see an increase in what BellSouth charges for MemoryCall service. It is unlikely that BellSouth MemoryCall could absorb the total cost impact of transitioning to a separate subsidiary without passing some of those costs on to consumers. There is even question as to whether MemoryCall would be a viable product on a separated basis. The increases in the cost of providing the service and subsequent increases in price could exceed customers' general willingness to pay.

Even if MemoryCall service remained viable within the region as a whole, it likely would not in some of the smaller metro areas. This would result in a withdrawal of service from the smaller, less profitable areas. This represents the second cost to the consumer. Customers in smaller, more rural areas would be impacted the most, potentially losing the option of MemoryCall service entirely.

Customers would also suffer not only from the higher cost of operating a separate subsidiary, but also from the costs and confusion caused by the transition to that environment. Such a transition would be extremely costly, difficult, and tedious. BellSouth currently has over 1.2 million mailboxes in service. MemoryCall service is available in more than 60 metropolitan areas and is served by over 100 individual voice mail platforms in 59 locations. In order to transition to a separate subsidiary, BellSouth would be required to locate, obtain, and condition floor space to house this equipment. In addition, BellSouth would be required to reconfigure many of the 11,000+ circuits in place which form the communications backbone of the service.

Because BellSouth would attempt to minimize service disruption for its customers, facilities and platforms also would have to be temporarily duplicated. Unfortunately, no amount of preparation could prevent all mistakes, and some service disruption would be likely. Customer orders would have to be frozen near the "cut" date. Also, customers would likely lose service or messages during the conversion to a new platform and may lose their mailbox contents entirely. Due to the magnitude of the conversion, it would likely take many months to complete. Any problems with the transition would leave customers with a resentment for network based enhanced services.

In addition to the physical transition of customers to new facilities, customers would need to be educated on their new contacts for sales and service. All customer support personnel and their equipment would have to be in place before the first customer is informed. Mailouts would then be sent to customers informing them of the change. Customers currently place thousands of calls per month to BellSouth regarding MemoryCall service. The massive transition process would be very confusing to customers both during and after the changeover.

In summary, BellSouth has seen tremendous acceptance of voice mail service as a consumer oriented enhanced service. This is evidenced by the dramatic growth in the number of customers for MemoryCall service. Part of the reason for voice mail's success in the consumer marketplace is the fact that it is offered on an integrated basis. From the customers' perspective, MemoryCall service is available simply by calling their "telephone company" and ordering it. It is a reasonably priced service which offers attractive features and at a price which is competitive with the voice mail alternatives.

A retreat to structural separation for voice mail operations would increase costs, cause customer confusion and irritation, and certainly lead to a decrease both in consumer use of existing voice mail services and in early adoption of future enhanced services. Indeed, a structurally separate environment would likely result in the end of voice mail service as a mass market, consumer service. None of these outcomes can be considered positive for the marketplace or consumers. Accordingly, no separate subsidiary requirement should be imposed.

CONCLUSION

As shown above, the Commission's ONA safeguards, ever absent "fundamental unbundling," have been and are effective in deterring or preventing discriminatory behavior by the BOCs. Experience and evidence also demonstrate the substantial benefits to consumers attained and attainable under structural relief and, conversely, the significant costs to consumers of a separate subsidiary requirement.

These showings compel a single conclusion: structural relief is in the public interest, separate subsidiaries are not. The Commission thus must reaffirm its structural relief policy in this proceeding.

Respectfully submitted,

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Date: April 7, 1995

CERTIFICATE OF SERVICE

I hereby certify that I have this 7th day of April, 1995, serviced all parties to this action with a copy of the foregoing COMMENTS reference to CC Docket 95-20, by hand delivery or by placing a true and correct copy of the same in the United States Mail, postage prepaid, addressed to the parties as set forth on the attached service list.

Julia W. Spires

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BENEFITS AND COSTS OF VERTICAL INTEGRATION OF BASIC AND ENHANCED TELECOMMUNICATIONS SERVICES

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BENEFITS AND COSTS OF VERTICAL INTEGRATION OF BASIC AND ENHANCED TELECOMMUNICATIONS SERVICES

I. Introduction

The FCC is in the process of reviewing its policies to determine the form in which the Bell Operating Companies (BOCs) may participate in the enhanced services market.[1] FCC regulation of enhanced services has previously addressed two potential problems. cross subsidization and access discrimination. The FCC has established two regulatory measures that significantly reduce the risk of cross subsidization. Price cap regulation, which breaks the link between direct costs and rate changes, does not allow the BOCs to raise prices above the rate caps approved by the FCC. The BOCs, therefore, do not have the incentive to set lower rates for regulated services used in the provision of enhanced services in the hope that they can increase prices for other regulated services. In addition, the FCC has implemented cost accounting rules, including detailed joint cost rules, cost allocation manuals, reporting requirements and accounting audits, that increase the ability to identify cross subsidization.

Access discrimination can arise when preferential network access is given to an BOC's affiliated enhanced services provider over a non-affiliated enhanced service provider. The FCC decided that network unbundling, in the form of discrete cost-based services and features. for services required to provide enhanced services would insure that BOCs could not discriminate against their competitors. The FCC's Open Network Architecture (ONA) framework and its unbundling policy were designed to accomplish network unbundling for features used by non-affiliated enhanced services providers to compete with the BOCs. In its recent remand decision. the Ninth Circuit required the FCC to explain and justify its decision to allow BOCs to offer all enhanced services on an integrated basis, given the current state of unbundling.[2] The FCC's investigation is, however, broader in scope than the minimum requirements set out by the Ninth

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[1] Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services, CC Docket No. 95-20, Notice of Proposed Rulemaking (released February 21. 1995).

[2] California v. FCC, 39 F.3d 919 (9th Cir. 1994) ("California III")

Circuit. An important factor in the FCC's reconsideration will be determining whether the economic benefits to be gained by permitting vertical integration of BOC basic and enhanced services exceed the possible costs imposed on consumers of not requiring structural separation.

This paper identifies and quantifies the potential benefits and costs of vertical integration of basic and enhanced telecommunications services. In particular, we find that joint production facilitates the offering of new products and services, which provide large benefits to consumers. Focusing on voice messaging -- to date the most prominent Regional Bell Operating Company enhanced service -- we calculate that the delay in making this service available has cost consumers well over $1 billion annually. The cost to consumers of delay has exceed well over $10 billion since 1981. In addition, the extra production costs that would be incurred by foregoing the economies of scope from joint production would amount to over $100 million annually. In contrast, (1) the enhanced service markets in which the BOCs operate are robustly competitive, (2) the existing Open Network Architecture rules followed by the BOCs are designed to offer nondiscriminatory access at prices that avoid cross-subsidies, and (3) all available evidence shows that these rules are working as intended and that the enhanced service market is thriving. It is clear that any benefits to competition that may arise from structural separation are far outweighed by the loss of benefits and extra costs we have identified which arise from structural separation.

The remainder of this paper has five sections. We first describe the economic principles that should guide telecommunications competition. In Section III, we examine the state of competition in information and enhanced services markets. Next, in Section IV, we measure the benefits from offering new telecommunications services. Section V quantifies the costs of structural separation. The final section summarizes our findings.

II. Economic Principles for Economically Efficient Competition

Telecommunications markets are generally very dynamic, compared to most other markets. Products are proliferating, new firms are joining the fray, and existing firms are adjusting through alliances, mergers, and the like. The market for enhanced telecommunications services is no exception. For voice messaging, which accounts for the bulk of the BOCs' enhanced service revenues, Frost & Sullivan estimated that 1993 revenues from voice messaging services were $1.4

billion and that the market is expected to grow at a rate of 12.7 percent annually through the year 2000.[3] In addition, revenues from competing voice messaging CPE are an equivalent amount and are growing at double digit rates.[4] In total, voice messaging revenues are approaching $3 billion annually. Further, there are literally thousands of firms providing voice messaging services, and the BOCs are far from enjoying a dominant position. For dynamic markets like these, it is especially important that firms be able to compete on their own merits, absent regulatory rules that help or hinder particular firms. In this section, we discuss the economic principles for efficient competition in dynamic markets.

A. Telecommunications competition (including enhanced services markets) is characterized by firms competing on the basis of unique scope economies

Telecommunications has always been characterized by economies of joint production, or scope economies. With the convergence of industries -- telephony, information, etc. -- the importance of scope economies is even greater. For example, AT&T has recently acquired McCaw, which provides cellular services, including voice messaging; Sprint has formed a venture with major cable television firms, and was the high bidder at the recently concluded broadband PCS spectrum auction. Clearly, although the BOCs have long possessed economies of scope, other competing firms have their own unique economies. To provide the greatest benefits to consumers, it is essential that all firms be able to employ these economies. The results of this type of competition are lower prices for consumers and greater availability of new services in a timely fashion. Measures that unduly restrict the employment of scope economies, such as onerous structural separation requirements, will reduce the benefits from competition and harm consumers.

Economists are close to unanimous in believing that, whenever feasible, effective competition produces results superior to those of comprehensive economic regulation. The potential benefits of introducing competition into regulated markets generally are of two major

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[3]Frost & Sullivan, U.S. Voice Messaging Service Markets, Report 5172-63 (Dec. 1994).

[4]NATA, 1993-94 Telecommunications Market Review and Forecast 171 (1994).

kinds: moving prices into closer correspondence with economic costs, and dynamic improvements in productive efficiency and in product or service offerings. Competition will concentrate on the services whose prices are held above marginal or incremental costs and tend to drive those prices down to the economically proper and efficient levels. Competition also tends -- unless it is distorted by regulation -- to improve the efficiency with which services are provided, by weeding high-cost firms out of the market and by exerting pressure on the survivors to improve the quality of their offerings and to be innovative in developing and offering new services and service combinations. Thus, telecommunications regulation should allow firms to employ their economies of scope so that services can be produced at minimum cost, and should allow these firms to be free to introduce innovative services which creates large gains in consumer welfare.

III. BOC Participation in the Enhanced Services Market Has Led to Lower Prices and Greater Output

BOC participation in the enhanced services market has been good for consumers. Consumer welfare increases when prices decrease. In the voice messaging services segment. which is the primary segment of current BOC participation, prices have decreased significantly since BOC entry. The range of the price decrease has been from about $30 per month in 1990 to $5-15 per month currently. An additional increase in consumer welfare arises when a new product is offered to a segment of consumers for the first time. BOC success in offering voice messaging to the "mass market" of residential and small business customers has been phenomenal. Over the past 5 years BOC subscriptions have increased from essentially zero to over 6 million subscriptions.[5] Growth for the rest of the decade is forecast at around 12 percent per year. No anticompetitive effect has occurred in voice messaging or other segments of the enhanced services market. Thus, BOC participation has been pro-competitive and has increased consumer welfare.[6]

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[5]"Voice Messaging," Telephony, Feb. 20, 1995, at 23.

[6]For BOC entry to have an anticompetitive effect, output would need to be lower than it would have been if the BOCs had been prohibited from participation. No party can seriously claim that output would have been higher without BOC participation. Effects on individual

The regulatory road for the BOCs to provide enhanced services has been long and tortuous. In 1981 AT&T applied to the FCC for permission to provide "Custom Calling II" services, which included voice messaging services, on an unseparated basis.[7] However, the FCC rejected AT&T's request. Subsequent to the FCC's negative decision, the Modification of Final Judgment (MFJ) went into effect. The BOCs were prohibited from providing "information services" (which had a very similar definition to the FCC "enhanced service" definition) under Section II.D.1 of the MFJ. The combined effect of the FCC decision and the MFJ caused voice messaging not to be offered to residential and small business customers by the BOCs.

The following events then transpired which permitted the BOCs to offer enhanced (information) services:

1985: The FCC begins Computer III proceedings with an emphasis on allowing BOCs to provide enhanced services subject to non-structural safeguards.

1988: (i) Judge Greene authorizes BOCs to provide "gateway" information services (which includes voice messaging under the MFJ).
(ii) BOCs file ONA plans designed to ensure competitors have Comparably Efficient Interconnection (CEI).
(iii) FCC begins approving CEI plans to allow BOCs to provide individual enhanced services on a structurally integrated basis.

1990: (i) Ninth Circuit remands Computer III to FCC.
(ii) FCC authorizes BOCs to continue to provide enhanced services on an interim basis according to CEI plans.

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competitors are subsumed into the overall measure of output when a consumer welfare calculation is done.

[7]AT&T had already designed and begun to install the services on an unseparated basis prior to the FCC's Computer II decision, which required structural separation.

1991: (i) Judge Greene removes information services restriction totally.

(ii) FCC issues remand order to allow structural integration of BOC enhanced services and approves final BOC ONA plans.

1992: BOCs begin offering integrated enhanced services under ONA plans.

1994: Ninth Circuit again remands Computer III to FCC.

1995: FCC authorizes BOCs to continue to provide enhanced services under the CEI plan regime.

From an economist's viewpoint, this regulatory imbroglio has created significant social costs. As we will discuss in the next section, consumer welfare would have been significantly higher if BOC voice messaging services had been offered sooner. Furthermore, government, management, and lawyers' time has been spent debating the issue of structural separation for nearly 20 years. A rational cost-benefit analysis demonstrates that the benefit to consumers of having BOC enhanced services available far exceeds any possible cost that hypothetically might arise. Indeed, we quantify these potential benefits and costs in the next sections of this paper.

As the above regulatory history demonstrates, the key dates were 1988 and 1991, when the MFJ restrictions were removed and the FCC decided to allow BOCs to offer enhanced services on a structurally integrated basis. Beginning in 1988, pending approval of final ONA plans, BOCs were permitted to offer specific enhanced services on a structurally integrated basis, subject to FCC approval of CEI plans for those services. The FCC ultimately approved blanket authorization for BOCs to offer enhanced services without a structural separation requirement in 1991. Thus, we consider data from 1988, 1991, and the most current data available to analyze the evolution of the enhanced services market.

Overall, information services are a large part of the U.S. economy, with estimated revenues of $135.9 billion. According to the Commerce Department, information services is "among the fastest growing sectors of the economy."[8] Some of the largest and most sophisticated companies in the U.S. participate in this sector, including GE, AT&T, MCI, IBM, Sears, Microsoft, TCI, Time Warner, and American Airlines.

The individual segments of the information service industry, all of which use telephone lines as well as other distribution media in varying ways, are also thriving. Enhanced (information) services have grown 15 percent a year since 1991 to reach an estimated $15 billion in 1994. Some 65 percent of these services are delivered on-line, with the remainder delivered on CD-ROM or using wireless or other distribution technologies. Data processing and network services are another segment which has grown by over 14 percent a year since 1991 to over $50 billion by 1994. This segment includes services such as credit card authorizations, data entry, payroll processing, electronic mail, and electronic data interchange. Lastly, computer professional services have grown by about 9 percent a year to reach $65 billion in 1994. This segment includes systems integration and consulting services. Thus, no anticompetitive effect of BOC entry into information services has occurred. Overall, the market continues to be very competitive.

The market segment for enhanced (information) services is particularly relevant here since this segment includes many of the business which the BOCs have entered. This segment, including on-line databases, value added network services, voice messaging, and electronic mail, grew from $7.5 billion in 1988 to $10.2 billion in 1991 and to $13.6 billion in 1993, which is the last available data.[9] Market growth in 1993 was 16 percent, which was higher than the year before. The market is expected to maintain that rate of growth for the next few years.[10]

Value added network (VAN) services have grown from $0.5 billion in 1989 to $3.4 billion in 1993. Subscribership to all videotex gateways increased from 715,000 in 1988 to 6.3 million

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[8]U.S. Dep't. of Commerce, 1994 U.S. Industrial Outlook 25-21 (1994).

[9]U.S. Industrial Outlook: 1990 at 29-2, 1992 at 26-1, 1994 at 25-2. The Commerce Department discontinued this publication in 1995.

[10]1994 U.S. Industrial Outlook 25-2 and 29-7.

in 1994.[11] Electronic mail has become widely available since 1988. E-mail subscribership has grown from 6 million in 1989 to over 13 million in 1993.[12] E-mail revenues increased from $574 million in 1989 to $740 million in 1991 and an estimated $1.2 billion in 1994. BOCs have not attained anything remotely close to a dominant position in any of these enhanced market segments.

Similarly, BOC entry into the voice messaging market segment has led to lower prices and higher demand. Between 1989 and 1991, users of voice messaging CPE more than doubled, from 5.3 million to 11.6 million, and now accounts for $1.3 billion annually.[13] The overall voice messaging market segment grew from $665 million in 1989 to $1.1 billion in 1991 and $1.54 billion 1994. Forecasts of future growth have the market doubling to over $3 billion by 2000.[14] Forecasted annual growth over this period is 12 percent. Thus, output has expanded rapidly in the voice messaging market segment which demonstrates the pro-competitive effects of changes in FCC and MFJ regulation.

Since 1991, prices have decreased by 50 percent for most voice messaging equipment. Equipment improvements such as voice messaging boards for PCs have become widely available at relatively low cost. Thus, voice messaging equipment continues to place a significant price constraint on network-based voice messaging services.

Prices for voice messaging services have decreased greatly since BOC entry into the market segment. Frost and Sullivan states that in 1990 the average monthly fee for voice messaging was just under $30. By 1993 the average monthly fee decreased by about 50%, or a decrease in price of over 20 percent per year. Frost and Sullivan attributes this "dramatic drop" in prices to the growth of a more competitive market, driven by the lower-priced voice messaging offered by the BOCs and the independent LECs. By 2000, Frost and Sullivan predicts a further

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[11]Boston Globe, Jan. 14, 1995, at 61.

[12]1990 U.S. Industrial Outlook 31-4; 1994 U.S. Industrial Outlook 29-7.

[13]NATA, 1991 Telecommunications Market Review and Forecast 135 (1991); NATA, 1993-94 Telecommunications Market Review and Forecast 171.

[14]NATA, 1993-94 Telecommunications Market Review and Forecast 171; Frost & Sullivan. U.S. Voice Messaging Services Markets, Report 5172-63 (Dec. 1994).

decrease in the average fee for voice messaging by about another 50 percent (pp. 3-10 to 3-11). Regarding current market conditions, Frost and Sullivan reports that:

> "Today, there are numerous providers of voice messaging services in a highly competitive market. The entrance of the BOCs and independent LECs in the late 1980s create fierce competition for the local/regional service bureaus....The RHCs and independent LECs have developed the residential end-user market, which previously had little interest in or knowledge of voice messaging." (p. 1-4)

Lower prices, increased competition, and development of a new market segment have been the result of BOC entry into the voice messaging segment of the enhanced services market. All of these outcomes lead to increased consumer welfare. This pro-competitive outcome stands in stark contrast to FCC and MFJ regulatory policy in the early and mid-1980s which led to an absence of BOC participation in enhanced service markets. Consumer welfare was lower and the economic efficiency of the U.S. economy was lowered by these misguided regulatory policies. Thus, as we discuss below, the FCC policy of structural integration and removal of the MFJ restrictions on information services provision by BOCs has led to a significant increase in consumer welfare which easily exceeds over $1 billion per year.

We finally observe that the voice messaging market is very unconcentrated. The BOCs and GTE combined account for about one-sixth of voice messaging revenues combined. However, individual LEC market shares are much lower. BOC market shares for voice messaging services range from around 6 percent for Bell Atlantic, BellSouth, and Pacific Telesis, to about 1 percent for NYNEX. Competition continues to be very strong for voice messaging customers, with both service prices and equipment prices decreasing at a rapid rate.

IV. Consumer Welfare from New Telecommunications Services

A. The Economic Importance of New Telecommunications Services

Regulatory restrictions which are designed to facilitate competition may often have a potentially much larger negative effect on consumer welfare which cannot be ignored: restrictions on the introduction of new goods and services.[15] Consider the introduction of a new telecommunications service which is not presently available -- call it home distance learning over personal computers. The demand for such a service will exist, as will a demand curve, which is a schedule of quantities which would be bought at each monthly service price. See Figure 1. At lower prices more service is demanded, but even at quite high prices some demand remains from people who value the service quite highly. If the service were offered at price p_1 in Figure 1, all those individuals who would have paid more than p_1 receive the difference between what they would have paid and what they actually pay in increased consumer welfare. This added value is called the consumer's surplus and is the area labelled A in Figure 1. Consumer's surplus is a dollar measure of increased consumer welfare, and is almost universally accepted by economists and policy makers in valuing the effects of economic policy.

Now suppose because of regulation that home distance learning is not offered. For instance, if structural separation is required, the cost of the BOCs providing home distance learning might well be sufficiently high that, at prices which would be charged, insufficient consumer demand would exist to make the economic return on the investment high enough to justify the investment.[16] The home distance learning application would then not be offered. No matter how much an individual is willing to pay, he cannot buy the home distance learning service. Indeed, the price might as well be infinity because no one can buy the service. If regulation is changed and the service is introduced, the price decreases from infinity to p_1. To measure the gain in economic welfare, we use the change in price from the "virtual or reservation price" which causes zero demand, price p_2 in Figure 1, to the price that will be charged, which

[15]The welfare effect of delayed introduction of new goods or services has not been considered in most analyses of the economic effects of regulation. See, e.g., P. Joskow and N. Rose, "The Effects of Economic Regulation," in R. Schmalensee and R. Willig, Handbook of Industrial Organization, vol. II (1989) for a review of the effects of regulation.

[16]While the demand curve in Figure 1 demonstrates that some consumer demand would exist unless prices became quite high, at high prices caused by high costs demand may not be enough to cover the fixed costs of providing the service. Fixed costs of providing enhanced services are almost always a large component of the overall costs of providing the service.

is p_1 in Figure 1.[17] The large change in price will lead to a large increase in economic welfare so long as significant demand exists for the new product or service.

The economic theory of the valuation of new goods was developed by the Nobel Prize winning British economist Sir John Hicks in 1940. In recent papers, Hausman further developed the theory and has applied it to measuring the consumer welfare cost of the delay in the introduction of cellular telephone.[18] We will first apply the theory to the case of voice messaging, which had a delayed introduction of approximately 5-7 years, to demonstrate the large potential losses in consumer welfare from regulatory-caused delays or even permanent postponement in the introduction of new telecommunications services.

B. Consumer Welfare Losses from the Delay in Voice Messaging

Voice messaging using central office-based telephone technology was sufficiently developed to begin operation in the early 1980's in the U.S.[19] As noted, AT&T applied for permission with the FCC in 1981 to provide "Custom Calling II" services, which included voice messaging services, on an unseparated basis. However, the FCC rejected AT&T's request, mainly because of fears of cross subsidy.[20] AT&T had claimed that it would need to redesign its network equipment to provide messaging on a structurally separated basis, but the FCC rejected the claim. AT&T stated that a redesigned system for structural separation would take three years to introduce, and the additional cost would be substantial. The FCC decided that, since it was "technically possible" to provide structurally separated voice messaging, AT&T would not be

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[17]For an application of the theory of the valuation of new goods and extension of the theory in a non-regulated context, see J. Hausman, "Valuation of New Goods Under Perfect and Imperfect Competition," MIT Working Paper (June 1994a).

[18]The papers are J.R. Hicks, "The Valuation of the Social Income," Economic Journal (1940); Hausman, 1994a, op. cit.

[19]See R.F. Rey, ed., Engineering and Operations in the Bell System (1983) for an early description of the development of AT&T's custom calling services.

[20]AT&T Petition for Waiver of Section 64.702 of the Commission's Rules and Regulations ¶18, 88 F.C.C. 2d 1 (1981). The FCC recognized the presence of economies of scope in voice messaging (¶17) but feared a "slippery slope" that would create regulatory uncertainty.